Wednesday, 13/06/2008 1:27:35 PM

User: Julie Lecoca

Process Sheet

Customer

: CU-DAR001 Dart Helicopters Services

S.O. No. :

Job Number Estimate Number : 39933 : 13029

P.O. Number

This Issue

: 18/06/2008 : NC

Prsht Rev. First Issue

Previous Run

: // : 36942

Type : SMALL /MED FAB **Part Number**

Drawing Name

: D36503

Drawing Number Project Number D3650 REV.B

: WELDMENT TOP PANEL

Drawing Revision

: N/A : B

Material

Due Date

: 07/07/2008

Each

Written By

Checked & Approved By

Comment

Est Rev:B ECN 1113P 08-01-22

Est Rev:C ecn1162

08-04-02

DD verified by: EC

DD

DD verified by: EC

Additional Product

Job Number:



Seq. #:

Machine Or Operation:

Description:

1.0

2.0

M304S26GA

WATER JET

Comment: FLOW WATER JET

Comment: Qty.:

2.4045 sf(s) 1.2023 sf(s)/Unit Total:

304/316 SS sheet 26 ga (0.018" thick)

Batch: 108415

108415

FLOW WATER JET

304/316 0.018 SHEET

1-Cut as per Dwg D3650

Dwg Rev:_

Prog Rev:_

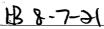


2-Deburr if necessary

3.0

QC2







HB8-07-21

Comment: INSPECT PARTS AS THEY COME OFF MACHINE

4.0

QC8

SECOND CHECK

Comment: SECOND CHECK

5.0

BRAKE NO

NC BRAKE

Comment: NC BRAKE

Form as per Dwg D3650



Page 1

Form: rprocess

Dart Aerospace Ltd

W/O:		WORK ORDER CHA	WORK ORDER CHANGES								
DATE	STEP	PROCEDURE CHANGE	Ву	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector				
							-				
			·								

Part No: 36503 PAR #: Fault Category: Prod Machine TW NCR: Yes No DQA: D Date: 08/05/08

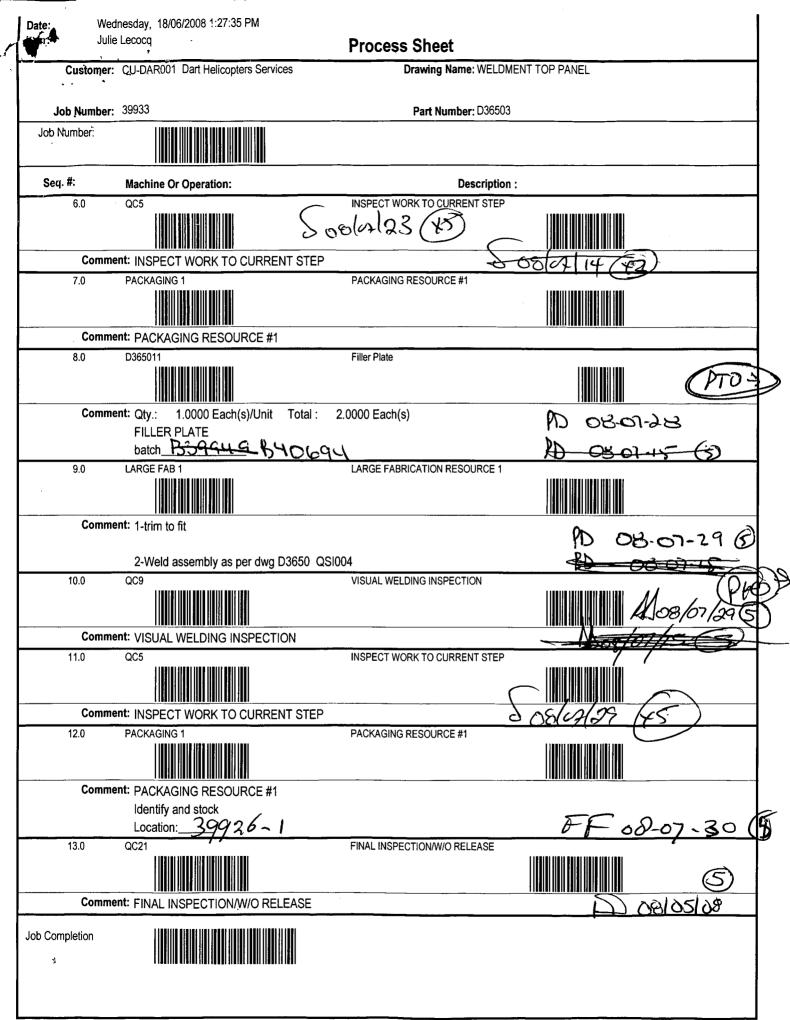
QA: N/C Closed: Date: CR/05/08

NCR:	39933	W	ORK OR	DER NON-CONFORMANCE	(NCR)			
DATE	STEP	Description of NC	Initia()	Corrective Action Section B			Approval	Approval
		Section A	Initial) Chief Eng	Action Description Chief Eng	Sign & Date	Section C	Chief Eng	QC Inspector
50/67/10	5.0	Dunking inspection of was Seens that the 2.12" from Deep form at 4.1" long is security 3.875" long.	Tosur	Pants are accepte as per Emoil between Roberto and mark Belavence. from Suly 11th, 700%	NA	Codoshir	Joseun	ortatio
		R.C. trolling has been incorrect since the beginning	Cour	open a Par to ReDos tooling to correct length.			desiur	ortotio
28/29/23	5	Part moved, sunder the jes at the bending need better i.S.	Josus	Scrap - déstroy no Replace (2) y (1) par par is lo pe opered problem already know about	SR 07/23	emulo;	Moule	*

NOTE: Date & initial all entries

RC Parts was viseo & test Kirst

H:\fFORMS\Quality Assurance\approved QA\NCRWO RevD



Dart Aerospace Ltd

W/0 : 3	9933	ES+ 共働 13029 / WORK ORDER CHANGES		·			
DATE	STEP	PROCEDURE CHANGE	Ву	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
81715	4.1	ADD step to grind welps flush after wilding -> make ac 10 persent chang.	A	08/07/28		lowal	<u>इस्क्र</u>
							•

Part No: <u>D3650-3</u> PAR #: <u>NA</u> Fault Category: <u>Procl/small flab</u> NCR: (Fes No DQA: <u>D</u>) Date: <u>OBIOSIOS</u>

QA: N/C Closed: <u>D</u> Date: <u>OBIOSIOS</u>

NCR: 3	9933	33 WORK ORDER NON-CONFORMANCE (NCR)						
DATE STEP		Description of NC	Initial	Corrective Action Section B Action Description	Verification	Approval	Approval	
		Section A	Chief Eng	Chief Eng	Sign & Date	Section C	Chief Eng	QC Inspector
08.07.15	^	11-02-ft trode est mind		Scrop D3650-4 Qty (1)	PD			
	9	R.C. Part has to be trines		no Replace	08.57-15	4,6		1,0
		by home	desiun		00	odualic	Lessur	20/28/6
		Parts were growned		-material is too thin,	4F		1	
060721	4.0	two much, resulting in the moterial being to thin. Itigh visk of crocking.		and can not be rewelded, or filled.	08/07/29			\ <u>\</u>
	9.1	High visk of cracking	POSIUZ	- Scrap : replace Q143		alala	FUSIUL	G + 12
	/ '	R.Codd Not pay stlention	23 (2	on this will		certain	12	Col C
		to the mount of material,	`					
		being removed, as and around the well.						ŧ
•								•
							".	, .

NOTE: Date & initial all entries



DART AEROSPACE LTD	Work Order: 3993
•	
Description: Center Panel	Part Number: D3650-3
Inspection Dwg: D3650 Rev: B	Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

x	First Article	Prototype
لنئا	i iiot Ai tioio	. iototypo

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.221	+0.005/-0.001	1995	×			
Ø0.213	+0.005/-0.001	:313	*			
0.40	+/-0.030	.40	*			
15.45	+/-0.030	15,45	7			
10.49	+/-0.030	10.49	¥e			
15.53	+/-0.030	15.55	×			
11.99	+/-0.030	17.00	×			
12.90	+/-0.030	12.91	₹			
4.300	+/-0.010	4.300	¥			
12.09	+/-0.030	12,094	₩			
13.06	+/-0.030	13.06	عظ			
1.943	+/-0.010	1.944	JE .			
5.884	+/-0.010	5.885	پد			
8.248	+/-0.010	9.548	L			
9.196	+/-0.010	9.196	L			
13.80	+/-0.030	13,80	<u>አ</u>			
2.28	+/-0.030	2,29	8			
7.19	+/-0.030	7.19	々			
9.55	+/-0.030	9.56	*			
10.65	+/-0.030	10.6E	8			
3.35	+/-0.030	3.38	*			
			,			
						·

Measured by:	tB	Audited by:	3 , .	Prototype Approval:	N/A
Date:	8-6-26	Date:	08/07/01	Date:	N/A

Rev	Date	Change	Revised by	Approved
Α	08.04.17	New Issue	KJ/DD TH	

DART AEROSPACE LTD	Work Order:	39933
Description: CENTER DANEL	Part Number:	D3650-3
Inspection Dwg: 57650 Rev: 2		Page 1 of 1

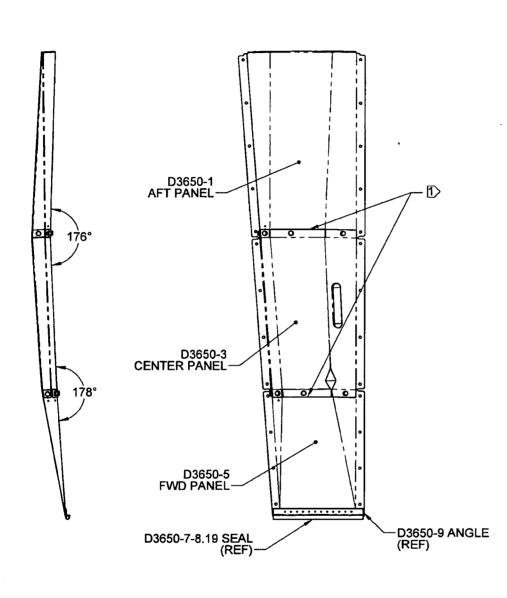
FIRST ARTICLE INSPECTION CHECKLIST

X First Article Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø .313	+005 -001	129KI	مِد			
\$.713	4005-001	.215	*			
140	4630	.40	*			
15.45	4/230	15.45	Ø			
10-49	t/ 030	10.49	A			
15.53	1/- 030	15.53	*	:		
11.99	1/030	11.44	ף			
09.61	4 .030	D90	X			
4.300	.016	4.301	×			
12.09	630	12.09	يخ			
13.06	120	18.06	Ł			
1-943	.610	1,943	×			
2.884	4/ -010	5,886	X			
876.8	*/ .010	026.8	Ł			
9.196	4010	9,700	*			
3.90	4 030	13.80	×			
3.98	t/030	5.39	*			
7.19	4030	7.195	X			
9.55	th .030	9.55	×			
10.65	730	10.65	X			
3.35	+/630	3.363	Ø			

Measured by:	HB	Audited by:	8	$\rceil \lceil$	Prototype Approval:	a	
Date:	9721	Date:	osloplar		Date:		7

Rev	Date	Change	Revised by	Approved
Α		New Issue	KJ/JLM	



D3650-041 TUNNEL TOP PANEL ASSEMBLY

NOTES:
1) SEAL ALL MATING SURFACES AND ALL GAPS USING PROSEAL 700 FIRE WALL SEALANT
2) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
3) UNITS: INCHES UNLESS OTHERWISE NOTED
4) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
5) IDENTIFICATION: NONE
6) TORQUE FASTENERS 15 TO 25 in-lb
7) WEIGHT: 3.3 lbs

8

AN3C-3A BOLT (1)
AN960C10 WASHER (1)
(8 PLACES) D3650-5 FWD PANEL (REF) -D3650-3 CENTER PANEL (REF) -D3650-1 AFT PANEL (REF)

PART L	_IST
--------	------

3

QTY -041	PART NUMBER	DESCRIPTION
X	D3650-041	TUNNEL TOP PANEL ASSEMBLY
1	D3650-1	AFT PANEL
1	D3650-3	CENTER PANEL
1	D3650-5	FWD PANEL
8	AN3C-3A	BOLT
8	AN960C10	WASHER

DESIG	N RF	DART AEROSPA	CF I	וח	MICHOUT NOTICE	'ICE
REV.		DESCRIPTION	BY	DATESUR	IL . TO AMENDMENT	DME
Α	NEW ISSUE		RF	07.11 ₁ 07,10	DWTROLLED COPY	> CO
В	UPDATED VIEWS SHEETS 3 & 8: REMOVIEWS SHEET 4: 1.8 WAS 1. ADDED NOTE 8 SHEET 5: REMOVED UPDATED VIEWS SHEET 6: REMOVED CUTOUT TO D3650-C ADDED DETAIL I	DATED FASTENER QUANTITIES; DVED/RELOCATED HOLES; UPDATED 5; 1.0 WAS 0.8; UPDATED VIEW; NOTE IN C6 & ASSOCIATED DIMS; //RELOCATED HOLES & ADDED /F; MOVED D3650-11/-11F TO SHEET 9; ED D3650-11/-11F FROM SHEET 6; D3650-11/-11F	RF	08.01.07	SHOP COPY RETURN TO ENGINEERING	1

	DESIGN	RF	DART AEROSPACE	LTD	رند زن
	DRAWN	RF	HAWKESBURY, ONTARIO, CAN	ADA	Ų,
	CHECKED	1. LE	DRAWING NO.	REV. B	ـــــ
	MFG. APPR.		D3650	SHEET 1 OF 9	
	APPROVED	7	TITLE	SCALE	
	DE APPR.	#	TOP PANEL ASSEMBLY	1:8	
DATE 08.01.07		1.07	COPYRIGHT @ 2007 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND COMPEDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE LISTED BY AN PURPOSE OF COMPED OR COMMENCE THE TO ANY OTHER PERSON WITHOUT		

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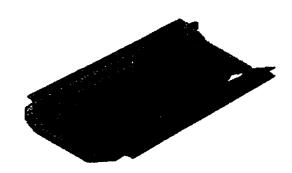
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10.26 (REF) 0 0 -D3650-3B CENTER PANEL BENT PART 0 B D3650-11-15.4 1.8^{+0.1}_{-0.0} (REF) 5.45 (REF) 9.24 (REF)

D3650-3 CENTER PANEL

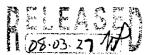


2

PART LIST

QTY -3	PART NUMBER	DESCRIPTION
X	D3650-3	CENTER PANEL
1	D3650-3B	CENTER PANEL BENT PART
1	D3650-11	FILLER PLATE

SHOP COPY RETURN TO RETURN TO
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WORK ORDED



DESIGN	RF	DART AEROSPACE	LTD	
DRAWN RF		HAWKESBURY, ONTARIO, CANADA		
CHECKED	. Le	DRAWING NO.	REV. B	
MFG. APPR.) X	D3650	SHEET 4 OF 9	
APPROVED	Mat	TITLE	SCALE	
DE APPR.		TOP PANEL ASSEMBLY	1:3	
DATE 08.0	1.07	COPYRIGHT © 2007 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS THE TOTAL AND CONFIDENCE OF COMPANY OF THE MANAGEMENT AND ANY CONFIDENCE OF THE PRIVATE AND CONFIDENCE OF THE P		

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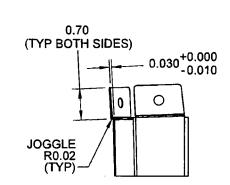
NOTES:
1) WELD PER QSI 004
2) FINISH: NONE
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: NONE
7) WEIGHT: 1.0 lb
8) TRIM D3650-11 TO FIT AS REQUIRED

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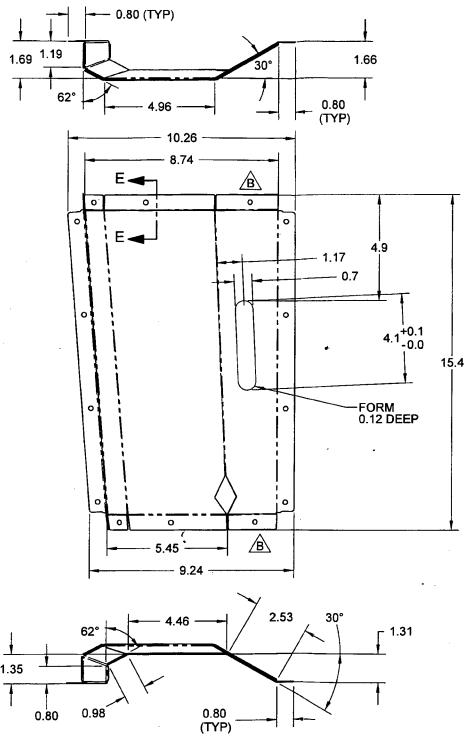
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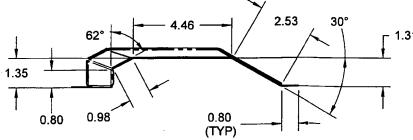
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SECTION E-E

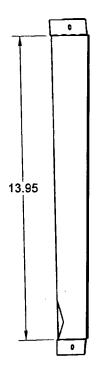
Awarting
revised cluy
from E.C.;
Roberto for
the PAR.





D3650-3B CENTER PANEL BENT PART (MAKE FROM D3650-3F FLAT PATTERN)

2



3

SHOP COPY
RETURN TO
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SUBJECT TO AMENDMENT

DESIGN RF DRAWN RF		DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA		
MFG. APPR.		D3650	SHEET 5 OF 9	
APPROVED	1. W.Z.	TITLE	SCALE	
DE APPR.	#	TOP PANEL ASSEMBLY	1:4	
DATE 08.01.07 COPYRIGHT © 2007 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND COMPIDENTIAL AND IS SUPPLIED OF UNTILE EXPRESS ON/OTHON THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT				

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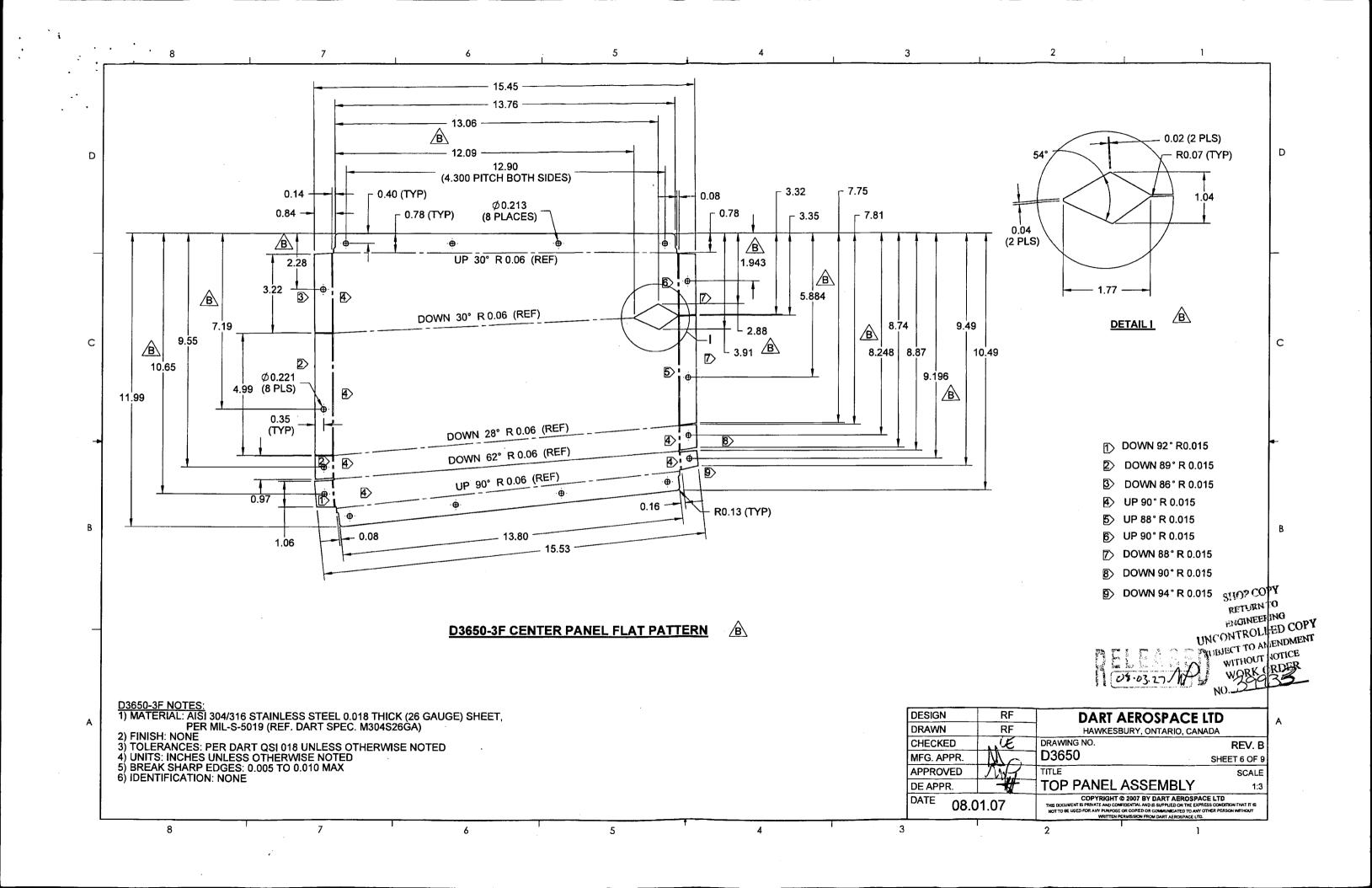
NOTES:
1) FINISH: NONE
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
.5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: NONE

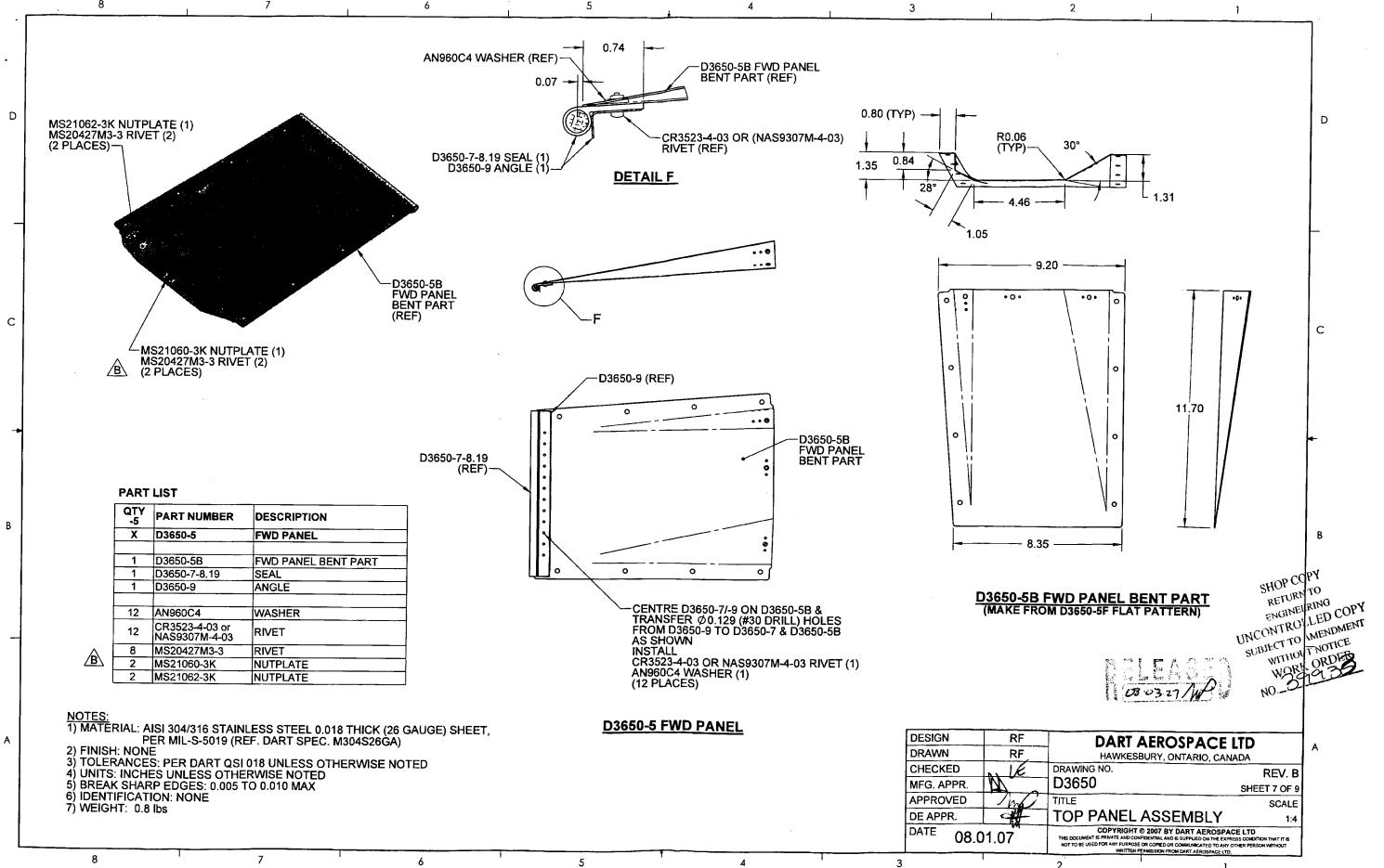
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2





-0.11 (TYP) 11.69 -R0.13 (TYP) Ø0.21 1.14 -(8 PLACES) 1.93 UP 30° R0.06 (REF) ϕ 0.098 (40 DRILL) (DIMPLE HOLES B DOWN 30 ° RO. 06 (REF) B FOR MS20427M3 0.344 RIVET (TYP) (TYP) 5.87 С С 8.23 8.34 9.18 — Ø0.213 (TYP) 10.45 - 0.35 (TYP) DOWN 28 ° RO.06 (REF) DOWN 62 ° R0.06 (REF) **DETAIL G** UP 90 ° R0.06 (REF) (2 PLS) 1.17 Ø0.098 (40 DRILL) (DIMPLE HOLES - 0.351 0.40 (TYP) 10.11 Ø0.213 (TYP) FOR MS20427M3 (3.370 PITCH BOTH SIDES) RIVET (TYP) 0.78 (TYP) SHOP COPY RETURNTO ENGINE RING UNCONTRO LED COPY - 0.312 SUBJECT TO MENDMENT D3650-5F FLAT PATTERN DETAIL H
(2 PLS) WITHOUT NOTICE (2 PLS) NOTES:
1) MATERIAL: AISI 304/316 STAINLESS STEEL 0.018 THICK (26 GAUGE) SHEET, DESIGN DART AEROSPACE LTD PER MIL-S-5019 (REF. DART SPEC. M304S26GA)

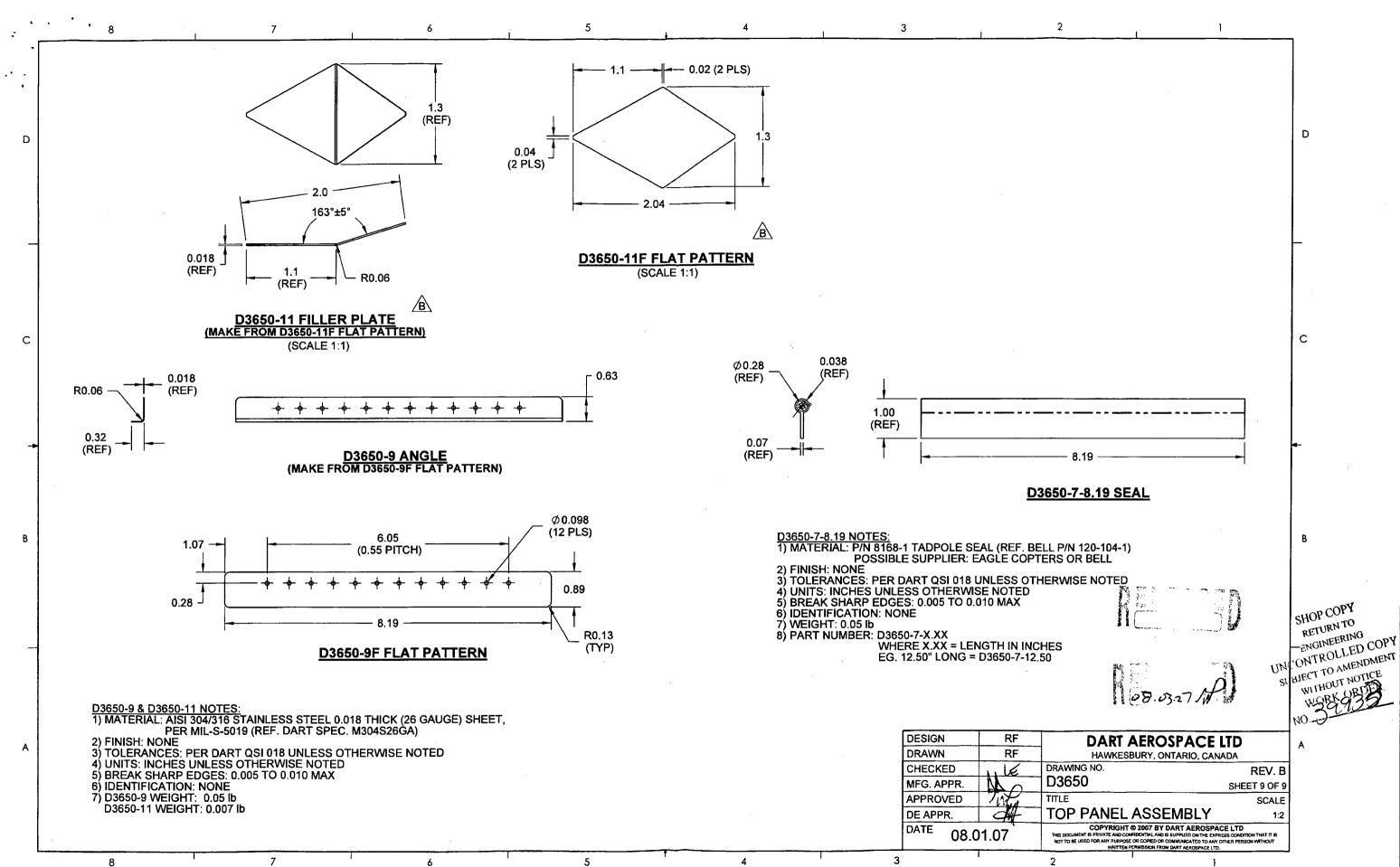
2) FINISH: NONE

3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED

4) UNITS: INCHES UNLESS OTHERWISE NOTED DRAWN RF HAWKESBURY, ONTARIO, CANADA CHECKED DRAWING NO. W REV. B D3650 MFG. APPR. SHEET 8 OF 9 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX 6) IDENTIFICATION: NONE APPROVED TITLE SCALE TOP PANEL ASSEMBLY 7) WEIGHT: 0.6 lb DE APPR. COPYRIGHT © 2007 BY DART AEROSPACE LTD

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NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT DATE 08.01.07 3 8 6 5



Marc Bellavance

From:

Roberto Fuentes [rfuentes@dartaero.com]

Sent:

July 11, 2008 10:03 AM

To:

'Marc Bellavance'

Cc:

'Jason Murdoch'

Subject: RE: D3650-3B Non-Conformance

It is acceptable 3.87" instead of 4.1" for this time. Ensure FAI and tooling need to update to much the 4.1" shown in the D3650 Rev. B drawing.

Roberto

From: Marc Bellavance [mailto:mbellavance@dartaero.com]

Sent: Friday, July 11, 2008 6:29 AM

To: 'Roberto Fuentes' Cc: 'Jason Murdoch'

Subject: D3650-3B Non-Conformance

Importance: High

Hey Roberto,

How are you today? Hope life is good at your end.

Eric Downing came to see me with a non-conformance on D3650-3B Center Panel Bent Part. The 4.1" +0.1"/-0.0" x 0.12" deep indentation measures 3.87" and is therefore 0.23" under tolerance. It turns out that the indentation was formed per tooling which also measures 3.87".

According to Dan Stow, the previous panels sent out to Eagle for form, fit and function purposes was made from the same tooling.

This means that the guys at Eagle installed a D3650-3B with an indentation that is 0.23" under tolerance.

Regardless, the part does not measure up to the drawing. So the guestion is: is the indentation acceptable at 3.87" instead of 4.1"?

If it is not acceptable, we will have to raise a NCR and have Production manufacture a new tool. If it is acceptable, we will have to revise our drawing.

Thanks Roberto!

Marc Bellavance Mechanical Designer/Technical Support

DART aerospace Ltd.

Tel:

613-632-5200 Ext. 240

Fax:

613-632-9311

E-mail: mbellavance@dartaero.com

Web: www.dartaero.com

Marc Bellavance

From: Roberto Fuentes [rfuentes@dartaero.com]

Sent: July 16, 2008 9:00 AM

To: 'Marc Bellavance'

Cc: 'David Duval'; 'Jason Murdoch'; 'Mike Petsche'

Subject: RE: D3650

Yes is required to be grinded flush on the outside surface. May be for this DEO drawing will do.

Thanks Marc, Roberto

From: Marc Bellavance [mailto:mbellavance@dartaero.com]

Sent: Wednesday, July 16, 2008 6:22 AM

To: 'Roberto Fuentes'

Cc: 'David Duval'; 'Jason Murdoch'; 'Mike Petsche'

Subject: D3650

Roberto,

On D3650 drawing, P/N D3650-11 gets welded to D3650-3 Center Panel. We know that the weld bead must be grinded flush to D3650-3 but this is not indicated on the drawing.

Can you reply to this email and give your okay to grind the weld flush? Maybe we can update the W/O (or Estimate) and eventually update the drawing.

Thanks Roberto!

Marc Bellavance Mechanical Designer/Technical Support

DART aerospace Ltd.

Tel: 613-632-5200 Ext. 240

Fax: 613-632-9311

E-mail: mbellavance@dartaero.com

Web: www.dartaero.com